

Remarks/Arguments:

Claims 1, 3, 8-10, 17, 19-28, 35-37, 41 and 42 are pending, with claims 17, 19-28 and 42 withdrawn. Claims 1, 3, 17, 19, 21, 22, 35-37 have been amended. Claim 18 has been canceled. Claims 41 and 42 have been added. Support of the amendments may be found in the specification at, for example, page 3, lines 25-31; page 4, line 10 to page 5, line 2; and page 8, lines 31-33; and original claims 13-16, 18, 19, 21 and 22. These amendments do not constitute new matter.

Claims 1, 3, 8-10 and 35-37 remain rejected under 35 U.S.C. § 103(a) as being unpatentable over Levy et al. (U.S. Pat. Appln. No. 2003/0044408) in view of Li (U.S. Pat. No. 6,524,572). The Examiner asserts that independent claim 1 can be interpreted to encompass a fusion protein as the modified protein comprising a CAR protein or a fragment thereof and non-specified sequences, and that the "gene transfer vector" refers to all vectors, including viral vectors. According to the Examiner, Levy et al. teach a composition comprising a surface modifier, a metal support to which the surface modifier is chemically coordinated, and a biological active molecule, which may be an antibody and/or a component of an affinity pairing system such as avidin or biotin; IgG or protein A; or transferrin or its receptor; and Li teaches a recombinant virus with a bispecific fusion protein comprising an extracellular domain of CAR/Hinge/protein A ligand, which may be replaced by any extracellular domain of a viral receptor. The Examiner contends that it would have been obvious to one skilled in the art to combine the teachings of Levy et al. regarding the composition and the teachings of Li regarding the fusion protein to arrive at the claimed invention of the pending claims.

In response, independent claim 1 has been amended to recite "[a] composition comprising a metal surface chemically coordinated to a surface modifier, a gene transfer vector, and a CAR protein or a fragment of a CAR protein, wherein the gene transfer vector is bound to the CAR protein or the fragment of the CAR protein, and the CAR protein or the fragment of the CAR protein is covalently bound to the surface modifier directly or via a linker." In particular, the amendments clarify the claimed invention to encompass a composition comprising a CAR protein or a fragment thereof, wherein the CAR protein or the fragment thereof is bound to a gene transfer vector and a surface modifier to which a metal surface is chemically coordinated. Further, the specification provides that "[a] surface modifier suitable for the present invention is any compound that (i) can chemically coordinate

with a surface, preferably a metal surface, and (ii) has a derivatizable functionality (e.g., a functional group) capable of reacting with a modified protein of the invention" and that "[s]pecific examples of such surface modifiers include but are not limited to polybisphosphonates, aminobisphosphonates and polyamines" (see page 8, lines 24-27 and 31-33 of the specification). Accordingly, a surface modifier as described in the specification is a compound, not a protein (e.g., antibody).

The cited references fail to teach or suggest the composition recited in claim 1. For example, Levy et al. and Li, alone or in combination, fail to disclose a composition comprising a CAR protein or a fragment thereof that is bound to a gene transfer vector and a surface modifier to which a metal surface is chemically coordinated. Levy et al. disclose a composition comprising a surface modifier, metal support, and a biologically active molecule (e.g., protein A), which binds a nucleic acid comprising a vector system. As conceded by the Examiner, Levy et al. fail to disclose a composition comprising a CAR protein or a fragment thereof, let alone a CAR protein or a fragment thereof that binds a surface modifier and a gene transfer vector. Li discloses a fusion protein comprising an antibody Fc-binding protein (e.g., protein A) and an extracellular domain of a viral receptor (e.g., CAR), but fails to make up the deficiency of Levy et al. Accordingly, the cited references do not teach or suggest each and every element of independent claim 1. Thus, independent claim 1 and therefore its dependent claims 3, 8-10, 35-37 and 41 are not obvious over Levy et al. and Li.

Conclusion:

For the foregoing reasons, Applicants respectfully request entry of the above amendments and remarks into the file of the above-identified application, and reconsideration and withdrawal of the obviousness rejection.

Respectfully submitted,



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Dated: October 29, 2010

Appln. No.: 10/567,872
Amendment Dated October 29, 2010
Reply to Office Action of September 8, 2010

RCHP-135US

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